

Amendment to the Claims:

This listing will replace all prior versions and listings of claims in the application:

Listing of Claims:

Claim 1. (previously presented) A film of a bimodal polyethylene produced by polymerization catalysed by a single site catalyst having more than one η^5 -cyclic ligand said bimodal polyethylene comprising

- ai) a lower molecular weight homopolymer of ethylene and
- bi) a higher molecular weight terpolymer of ethylene, 1-butene and a C₆ to C₁₂ alpha-olefin,

or

- aii) a lower molecular weight polymer which is a binary copolymer of ethylene and a comonomer selected from C₄ to C₁₂ alpha-olefins and
- bii) a higher molecular weight polymer which is either a binary copolymer of ethylene and 1-butene, if the lower molecular weight polymer of aii) is a binary copolymer of ethylene and a C₆ to C₁₂ alpha-olefin, or a terpolymer of ethylene, 1-butene and a comonomer selected from C₆ to C₁₂ alpha-olefin;

wherein all components are made by the same catalyst.

Claim 2. (previously presented) A film as claimed in claim 1 wherein the C₆ to C₁₂ alpha-olefin of part bi) is selected from the group consisting of: hex-1-ene, 4-methylpent-1-ene, hept-1-ene, oct-1-ene and dec-1-ene.

Claim 3. (previously presented) A film as claimed in claim 1 wherein the comonomer of part aii) is selected from the group consisting of: but-1-ene and hex-1-ene.

Claim 4. (previously presented) A film as claimed in claim 1 wherein the lower molecular weight component constitutes from 30 to 70% wt of the polyethylene.

Claim 5. (previously presented) A film as claimed in claim 1 wherein the comonomer content of said polyethylene is 0.1 to 10% mol.

Claim 6. (previously presented) A film as claimed in claim 1 wherein the density of said polyethylene is from 905 to 930 kg/m³.

Claim 7. (previously presented) A film as claimed in claim 1 wherein the weight average molecular weight of said polyethylene is 50000 to 250000 g/mol.

Claim 8. (previously presented) A film as claimed in claim 1 wherein the molecular weight distribution of said polyethylene is from 3 to 8.

Claim 9. (previously presented) A film as claimed in claim 1 wherein the MFR₂ of said polyethylene is 0.4 to 3 g/10 min.

Claim 10. (previously presented) A film as claimed in claim 1 wherein said polyethylene is blended with a further polymer.

Claim 11. (original) A film as claimed in claim 10 wherein said further polymer is a low density polyethylene (LDPE).

Claim 12. (previously presented) A film as claimed in claim 1 comprising a plurality of layers.

Claim 13. (previously presented) A film as claimed in claim 1 produced by extrusion using a blow up ratio of from 2:1 to 4:1.

Claims 14-22. (canceled)

Claim 23. (previously presented) A film as claimed in claim 1 wherein said bimodal polyethylene comprises

- a ii) a lower molecular weight polymer which is a binary copolymer of ethylene and a comonomer selected from C₄ to C₁₂ alpha-olefin and
- b ii) a higher molecular weight polymer which is either a binary copolymer of ethylene and 1-butene, if the lower molecular weight polymer of a ii) is a binary copolymer of ethylene and a C₆ to C₁₂ alpha-olefin, or a terpolymer of ethylene, 1-butene and a comonomer selected from C₆ to C₁₂ alpha-olefin.

Claim 24. (previously presented) A polyethylene composition for film production, said composition comprising a bimodal polyethylene produced by polymerization catalysed by a single site catalyst having more than one η^5 -cyclic ligand comprising

- a i) a lower molecular weight homopolymer of ethylene and
- b i) a higher molecular weight terpolymer of ethylene, 1-butene and a C₆ to C₁₂ alpha-olefin,

or

- a ii) a lower molecular weight polymer which is a binary copolymer of ethylene and a comonomer selected from C₄ to C₁₂ alpha-olefins and
- b ii) a higher molecular weight polymer which is either a binary copolymer of ethylene and 1-butene, if the lower molecular weight polymer of a ii) is a binary copolymer of ethylene and a C₆ to C₁₂ alpha-olefin, or a terpolymer of ethylene, 1-butene and a comonomer selected from C₆

to C₁₂ alpha-olefin;

wherein all components are made by the same catalyst.

Claim 25. (previously presented) A composition as claimed in claim 24 wherein the C₆ to C₁₂ alpha-olefin of part bi) is selected from the group consisting of: hex-1-ene, 4-methyl-pent-1-ene, hept-1-ene, oct-1-ene and dec-1-ene.

Claim 26. (previously presented) A composition as claimed in claim 25 comprising a blend of said polyethylene and a further polymer.

Claim 27. (previously presented) A compositions as claimed in claim 26 wherein said further polymer is a low density polyethylene (LDPE).

Claim 28. (previously presented) A product packaged within a heat-sealed film of a bimodal polyethylene produced by polymerization catalysed by a single site catalyst having more than one eta⁵-cyclic ligand comprising

- ai) a lower molecular weight homopolymer of ethylene and
- bi) a higher molecular weight terpolymer of ethylene, 1-butene and a C₆ to C₁₂ alpha-olefin,

or

- a ii) a lower molecular weight polymer which is a binary copolymer of ethylene and a comonomer selected from C₄ to C₁₂ alpha-olefin and
- b ii) a higher molecular weight polymer which is either a binary copolymer of ethylene and 1-butene, if the lower molecular weight polymer of a ii) is a binary copolymer of ethylene and a C₆ to C₁₂ alpha-olefin, or a terpolymer of ethylene, 1-butene and a comonomer selected from C₆ to C₁₂ alpha-olefin;

wherein all components are made by the same catalyst.

Claim 29. (previously presented) A product as claimed in claim 28 wherein the C₆ to C₁₂ alpha-olefin of part bi) is selected from the group consisting of: hex-1-ene, 4-methyl-pent-1-ene, hept-1-ene, oct-1-ene and dec-1-ene.

Claim 30. (previously presented) A product as claimed in claim 28 being a packaged foodstuff or liquid.

Claim 31. (previously presented) A composition as claimed in claim 24 wherein the comonomer of part aii) is selected from but-1-ene and hex-1-ene.

Claim 32. (previously presented) A product as claimed in claim 28 wherein the comonomer of part aii) is selected from but-1-ene and hex-1-ene.

Claim 33. (previously presented) A film as claimed in claim 1 wherein aii) is an ethylene butene copolymer and bii) is an ethylene hexene copolymer.

Claim 34. (previously presented) A composition as claimed in claim 24 wherein aii) is an ethylene butene copolymer and bii) is an ethylene hexene copolymer.

Claim 35. (previously presented) A product as claimed in claim 28 wherein aii) is an ethylene butene copolymer and bii) is an ethylene hexene copolymer.

-- Claim 36. (new) A film of a multimodal polyethylene produced by polymerization catalysed by a single site catalyst having more than one η^5 -cyclic ligand said multimodal polyethylene comprising:

A) a lower molecular weight copolymer of ethylene and a C₄ to C₁₁ alpha-olefin;

B) a higher molecular weight copolymer of ethylene and a C₅ to C₁₂ alpha-olefin of higher molecular weight than the olefin employed in component A);
wherein all components are made by the same catalyst.

37. (new) A film as claimed in claim 1 wherein component A is an ethylene-butene copolymer and component B is an ethylene-hexene copolymer.

38. (new) A polyethylene composition for film production, comprising:

a multimodal polyethylene produced by polymerization catalysed by a single site catalyst having more than one η^5 -cyclic ligand, said multimodal polyethylene comprising:

A) a lower molecular weight copolymer of ethylene and a C₄ to C₁₁ alpha-olefin;

B) a higher molecular weight copolymer of ethylene and a C₅ to C₁₂ alpha-olefin of higher molecular weight than the olefin employed in component A);
wherein all components are made by the same catalyst.

39. (new) A polyethylene composition for film production as claimed in claim 38 wherein component A is an ethylene-butene copolymer and component B is an ethylene-hexene copolymer.

40. (new) A product packaged within a heat-sealed film of a multimodal polyethylene produced by polymerization catalysed by a single site catalyst having more than one η^5 -cyclic ligand said multimodal polyethylene comprising:

A) a lower molecular weight copolymer of ethylene and a C₄ to C₁₁ alpha-olefin;

B) a higher molecular weight copolymer of ethylene and a C₅ to C₁₂ alpha-olefin of higher molecular weight than the olefin employed in component A);
wherein all components are made by the same catalyst.

41. (new) A product as claimed in claim 40 wherein component A is an ethylene-butene copolymer and component B is an ethylene-hexene copolymer. --